

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
NATIONAL STARCH AND CHEMICAL CO.
Attn. Roland, Thomas F.
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Bridgewater, New Jersey 08807
UNITED STATES OF AMERICA

INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

REGISTERED

Date of mailing (day/month/year)	12/06/2003
PAYMENT DUE	within 45 XXX days from the above date of mailing
International filing date (day/month/year)	14/01/2003

Applicant's or agent's file reference
1998.VIN 1991.111

International application No.
PCT/US 03/01104

Applicant

NATIONAL STARCH AND CHEMICAL INVESTMENT HOLDING...

1. This International Searching Authority

(i) considers that there are 4 (number of) inventions claimed in the international application covered by the claims indicated ~~XXX~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~XXX~~ on the extra sheet:

(ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:

See additional sheet, Invention 1.

(iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid


2. The applicant is hereby **invited**, within the time limit indicated above, to pay the amount indicated below:

<u>EUR 945,00</u>	x	<u>3</u>	=	<u>EUR 2.835,00</u>
Fee per additional invention		number of additional inventions		total amount of additional fees

Or, _____ x _____ = _____

The applicant is informed that, according to Rule 40.2(c), **the payment of any additional fee may be made under protest**, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority
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Andria Overbeeke-Siepkens

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9

A discret or single-dose detergent formulation comprising a specific hydrophobically modified polymer wherein said formulation is formed into pre-measured single dose portions.

2. Claims: 10-11

A formulation comprising a non-aqueous solution comprising the same specific hydrophobically modified polymer.

3. Claims: 12-15

A method for treating aluminium comprising at least one surface of an aluminium object with a formulation comprising the same specific hydrophobically modified polymer

4. Claims: 16-17

A rinse aid composition comprising the same specific hydrophobically modified polymer wherein said composition is used as a rinse aid in the rinse cycle of an automatic dishwasher.

The concept common to all independent claims related to the composition is: "a formulation comprising a hydrophobically modified polymer". The problem underlying the first and second invention is to find an excellent dispersing aid, especially from single dose tablets, pouches and sachets, increasing their solubility rate (see p.2 1.1-7). Especially the problem underlying the first invention is to increase the dissolution rates of surfactants into aqueous systems (see p.1 1.13-15, p.2 1.8-14, p.10 1.2-23, ex.9-11). Furthermore, the problem underlying the second invention is to increase the solubility of polymers in non-aqueous solvents used in pouches and sachets formulations (p.2 1.15-24, p.10 1.24 - p.11 1.3, ex.8, 24). The problem underlying the third invention is to minimize the corrosion rates of aluminium in a number of applications, ranging from dishwashing to aircraft cleaning formulations to metal working fluids (see p.1 1.17-18, p.3 1.1-4, p.11 1.4-7, ex.12, 24). The formulation might be either aqueous (see ex.13,15) or non-aqueous solution (ex.24). The problem underlying the fourth invention is to find a soil release aid which suspends hydrophobic soils (p.1 1.15-17, p.2 1.25- p.3 1.1) in autodish and hard surface cleaning applications.

No general problem underlying the present application has been found. Evenmore example 16 (water repellent sunscreen comprising such hydrophobically modified polymer) falls within the concept common to all independent claims but neither to any distinguished claimed inventions nor to any hereabove problem/solution approach.

According to US5719112, cited by the applicant, a dishwashing composition comprising such hydrophobic modified polymer is known for

inhibiting calcium soap deposition on tableware.

According to US5650473, cited by the applicant, such hydrophobic modified polymer used in fabric and hard surface cleaning composition is known for its anti-corrosive effect, particularly on aluminium and can be used to replace highly alkaline silicates in automatic dishwashing powders(see ex.4), it is also known as soil release aids (see ex.7) and have additional advantages (see col.10 l.45-49).

Thus the common concept of the present application is not novel in view of each cited application taken individually.

The common problem underlying the first and second invention is to find an excellent dispersing aid, especially from single dose tablets, pouches and sachets, increasing their solubility rate. According to EP971028, a detergent tablet comprising surfactant and hydrotome compound (see claim 1) wherein the hydrotome compound might be a polymeric hydrotome such as those described in EP636687 (see p.3 l.46 to p.4 l.5). As mentionned in EP636687, incorporated hereto as reference, hydrotomes are substances which solubilise a surfactant in an aqueous solution (see p.2 l.1-6). The polymeric hydrotome revealed in EP971028 and EP636687, comprises hydrophilic and hydrophobic monomers such as the hydrophically modified polymer claimed in claims 1 to 17 of the present application. Therefore such polymer is known for increasing the solubility of surfactants in aqueous solution and improving, by the way, the dissolution rate of the detergent tablet. Therefore the common technical features as well as the general problem underlying the first and second invention and its solution are considered to be known from EP971028 and EP636687, incorporated hereto as reference.

Since the single general concepts are not novel, it cannot be the single general inventive concepts which are required to be present by article 3(4)(iii) and rule 13.1 PCT and hence, there is lack of unity.

In the present application no further technical features can be distinguished that could be regarded as special technical features involved in the technical relationship among the different inventions.

The inventions are grouped into 4 inventions.
Only the first group of inventions has been searched.

Annex to Form PCT/ISA/206
COMMUNICATION RELATING TO THE RESULTS
OF THE PARTIAL INTERNATIONAL SEARCH

International Application No
PCT/US 03/01104

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	EP 0 971 028 A (PROCTER & GAMBLE) 12 January 2000 (2000-01-12) page 3, line 46 -page 4, line 5; claims 1,9 ---	1-9
Y	EP 0 636 687 A (NAT STARCH CHEM CORP) 1 February 1995 (1995-02-01) page 2, line 1 - line 6; claims 1-18 ---	1-9
X	US 5 719 112 A (GORDON JAMES WILLIAM ET AL) 17 February 1998 (1998-02-17) cited in the application column 1, line 8 - line 11; claim 1; examples I-IV ---	1-4,6,7
X	EP 1 087 009 A (ROHM & HAAS) 28 March 2001 (2001-03-28) polymer 4 claims 1-10; tables I,III ---	1-8
A ✓	US 5 650 473 A (KIMPTON PAUL T ET AL) 22 July 1997 (1997-07-22) cited in the application column 4, line 3 - line 9 column 4, line 54 - line 61 column 5, line 25 - line 27 column 5, line 43 - line 58 examples 4,6-8 --- -/--	1-9

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

**Annex to Form PCT/ISA/206
COMMUNICATION RELATING TO THE RESULTS
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No
PCT/US 03/01104

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	US 6 492 312 B1 (SECEMSKI ISAAC ISRAEL ET AL) 10 December 2002 (2002-12-10) column 6, line 17 - line 19; claims 6,7 ---	1-4,6-10
P,X	DE 101 04 469 A (BASF AG) 8 August 2002 (2002-08-08) page 14; claims 1,7,9,10; examples 1-10 -----	1-8

Patent Family Annex

Information on patent family members

International Application No

PCT/US 03/01104

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0971028	A	12-01-2000	EP 0971028 A1	12-01-2000
EP 0636687	A	01-02-1995	EP 0636687 A2	01-02-1995
US 5719112	A	17-02-1998	AU 703378 B2	25-03-1999
			AU 2614795 A	19-01-1996
			BR 9508089 A	12-08-1997
			CA 2190349 A1	04-01-1996
			DE 69511091 D1	02-09-1999
			DE 69511091 T2	18-11-1999
			WO 9600277 A1	04-01-1996
			EP 0766726 A1	09-04-1997
			ES 2133775 T3	16-09-1999
			ZA 9504521 A	02-12-1996
EP 1087009	A	28-03-2001	AU 5644400 A	29-03-2001
			BR 0004367 A	10-04-2001
			CA 2317977 A1	24-03-2001
			CN 1290481 A	11-04-2001
			EP 1087009 A2	28-03-2001
			JP 2001146520 A	29-05-2001
			US 6503878 B1	07-01-2003
			US 2002086809 A1	04-07-2002
US 5650473	A	22-07-1997	DE 69511491 D1	23-09-1999
			DE 69511491 T2	23-03-2000
			EP 0697422 A1	21-02-1996
			US 5886076 A	23-03-1999
			US 5789511 A	04-08-1998
US 6492312	B1	10-12-2002	WO 02074892 A1	26-09-2002
			US 2002187916 A1	12-12-2002
DE 10104469	A	08-08-2002	DE 10104469 A1	08-08-2002
			WO 02064719 A1	22-08-2002